U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
ASSISTANT SECRETARY FOR HOUSING-FEDERAL HOUSING COMMISSIONER

TO: DIRECTORS, HOUSING DIVISION
DIRECTORS, MULTIFAMILY DIVISION
DIRECTORS, SINGLE FAMILY DIVISION

Series and Series Number:
(Supersedes issue dated September 22, 1993)
MATERIALS RELEASE NO. 1076d

ISSUE DATE: August 14, 1997

REVIEW DATE: August 19, 2000

SUBJECT: 1. Product R-Brick Panel System and Insulock System

2. Name and Address of Manufacturer

American Brick Company
27303 W. Eight Mile Road
Detroit, MI 48240

USE: Exterior wall veneer.

DESCRIPTION:

The R-Brick Panel System consists of a 1/2" thick face-brick factory adhered to an insulating extruded polystyrene foam board. The panelized siding product is an exterior insulating finish system designed to simulate brick veneer construction in a running bond, stack bond, or soldier course pattern. The panels may be specified with 1" or 2" thick foam board and a 48" x 16" panel with 36 modular bricks (7 5/8" x 2 1/4"). Running bond panels are six courses high with spaces for mortar joints between the adhered 1/2" brick slabs.

The panels are mechanically fastened to the structural wall by means of a galvanized steel, tongue-and-grooved starter angle and clip system. Mortar is applied in the joints between the bricks to create a bond between the bricks and the mechanical fastening system.

The Insulock System consists of 1/2" thick face-brick field applied to an insulating extruded polystyrene foam board which has been modified with channels and ribs to receive the bricks. The siding product is an exterior insulating finish system designed to simulate brick veneer construction in a running bond, stack bond, or soldier course pattern. The foam panels are 48" x 96" and may be specified with 1/2", 1", or 1-3/4" thicknesses.

The panels are mechanically fastened to the structural wall by means of a galvanized steel support clip system. Mortar is applied in the joints between the bricks to create a bond between the bricks and the mechanical fastening system.

MATERIALS:

Bricks shall be 1/2" thick slabs meeting the requirements of ASTM C 216, Grade SW.

The polystyrene board to which the brick is factory applied shall be extruded polystyrene board, conforming to ASTM C 578 Type IV board.

Adhesive for affixing the bricks to the insulation board shall be a synthetic rubber and resin type with 65% solids by weight, conforming to ASTM C 557 and C 920.

Grouting mortar shall be American Brick Company's, "R-Brick Grout-Mix," containing a redisburseable latex polymer. The grouting mortar shall be mixed with water at the job site.

Continuous starter angles, support angle clips and mid-panel clips shall not be less than G 90 ASTM A 525 galvanized steel, 22 gauge thickness for 1" foam backerboard and 20 gauge thickness for 2" foam backerboard. All other items shall have a galvanized coating not less than G 90 per ASTM A 525. Starter angles and clips shall be supplied by American Brick Co. All miscellaneous accessories shall be supplied by American Brick Company.

DESIGN CRITERIA:

Maximum effective velocity wind pressures shall be determined by American Society of Civil Engineers (ASCE) Standard 7-88.

LIMITATIONS:

Maximum allowable external and internal velocity pressures for the R-Brick Panel System and the Insulock System installed over approved building sheathing fastened in an approved manner to wood or steel studs at 16" on centers is 31 psf.

Maximum allowable external and internal velocity pressures for the R-Brick Panel System and the Insulock System installed over 5/8" gypsum board glued and screwed to steel studs spaced at 16" on center, is 60 psf. When installed over 5/8" gypsum glued and screwed to steel studs spaced at 24" centers the maximum allowable effective velocity pressure is 50 psf.

The allowable velocity pressures were determined by ASTM E 330 windload test and include a safety factor of 2 1/2. The deflection of the R-Brick Panel System and Insulock System measured between the studs was limited during the windload test to a maximum of L/240. Stud design shall be limited to a maximum deflection of L/360.

INSTALLATION:

Installation shall be in strict compliance with the manufacturer's specifications and the following provisions:

1. Exterior wall construction to receive the R-Brick or Insulock panels shall provide adequate resistance to racking in compliance with the HUD Minimum Property Standards independent of the R-Brick or Insulock panel.

2. Exterior walls shall be constructed of wood or steel studs covered with an American Brick Company approved sheathing, or steel studs covered with gypsum sheathing. An American Brick Company approved vapor permeable moisture barrier shall be installed over the wall sheathing prior to the installation of the R-Brick or Insulock Panel Systems.

3. The R-Brick panels shall be fastened utilizing the continuous starter angle, 3" long support angle clips, and mid-panel clips. All starter angles and support clips shall be attached to the structure with hand or power driven fasteners that have sufficient length to penetrate a minimum of 1" into the studs. Fasteners shall be located at each stud.

   A. The continuous starter angle shall be installed at the bottom of the first course of wall panels and at the bottom of the first course over all wall openings, such as doors and windows.

   B. The support angle clips shall be set firmly on the panels so that the tongue of the panel is set firmly into the groove of the support angle clip. The support angle clip shall extend at least 1/4" beyond the face of the polystyrene board. The support angle clip shall be attached to each stud with a fastener that has sufficient length to penetrate a minimum of 1" into the stud framing.

C. Mid-panel clips shall be installed between the bricks on the face of the foam backerboard at the vertical mid-point of the support angle clips and the continuous starter angle and attached with fasteners of sufficient length to penetrate a minimum of 1" into the studs. Mid-panel clips are also to be installed in the head joints of the bricks at maximum of 16" on centers in areas where the support clip angles cannot be utilized, ie: under window sills, at soffits, etc.

4. The Insulock Panels shall be fastened utilizing the Insulock support clips attached to the structure with hand or power driven fasteners that have sufficient length to penetrate a minimum of 1" into the studs. Fasteners shall be located on 16" centers horizontally and on 8" centers vertically.

A. An "L" shaped flashing and drip channel, of appropriate dimension for the vertical leg to extend 3" up the wall and the horizontal leg to the outer brick face, shall be installed at the bottom of the first course of Insulock panels and at the bottom of the first course over all wall openings, such as windows and doors.

B. The Insulock clips shall be set firmly on the face of the panels so that the bottom of the clip rests snugly against the top of a rib section. The clips shall be attached to the studs with a fastener that has sufficient length to penetrate a minimum of 1" into the stud framing.

5. A vapor barrier of not more than 0.5 perm shall be installed on the warm side of the structural wall.

6. Over masonry walls the R-Brick panel starter angle, support clips and mid-panel clips, and Insulock "L" channel and support clips shall be attached with 3/16" fluted shank masonry nails that provides for a 1/2" minimum penetration into the masonry walls.

7. Over steel studs with gypsum board, the R-Brick panel starter angle, support clips and mid-panel clips, and Insulock "L" channel and support clips shall be attached with #8 self-drilling and tapping type screws of sufficient length to penetrate three fully exposed threads.

8. All fastening devices shall be of a corrosion-resistant type.

9. R-Brick Ready-Mix grouting mortar shall be delivered to the job site in sealed bags, and shall be prepared in compliance with the manufacturer's printed instructions on the bag.

10. When all panels and bricks are secured in place, the joints shall be filled with grouting mortar of the R-Brick Grout Mix. All joints shall be tooled. The joints shall be struck so that the mortar does not exceed 1/8" depression below the face of the brick. At no time shall the mortar joints be raked.

11. Weep holes shall be provided by the installer by removing a 3/8" high x 3/8" wide section of grout at the bottom of the head joints above the support angle. Weep holes shall be a maximum of 32" on centers and shall extend through the grout to the face of the foam backerboard. Weep holes may be drilled into the grout after it is cured using a 1/4" diameter masonry drill.

12. The area where the brick panel abuts a dissimilar material shall be caulked with an American Brick Company approved material.

13. Vertical and horizontal expansion of the brick faces shall be provided by installing a minimum 5/8" wide expansion joint completely through the brick and foam backer and filled with a backer rod and sealant 20' on center in both directions. The expansion joint shall be in compliance with American Brick Comany specifications.

14. The R-Brick Panel System and Insulock System shall be installed by an applicator approved by American Brick Company.

WARRANTY:

American Brick Company shall warrant R-Brick Panel System and Insulock System for twenty (20) years against faulty performance. The warranty shall include corrections of delamination, chipping, denting, peeling, blistering, flaking, bulging, unsightly discoloration, and other serious deterioration of the system. Should any defects appear, American Brick Company shall make a pro rata allowance for replacement or pay the owner the amount of the allowance. American Brick Company not be liable for damages or defects resulting from misuse, natural catastrophes, (other than hail) or other causes beyond the control of the American Brick Company.

MANUFACTURER'S RESPONSIBILITIES:

Issuance of this Materials Release (MR) commits the manufacturer to fulfill, as a minimum, the following:

1. Produce, label and certify the material, product or system in strict accordance with the terms of this MR.

2. Provide necessary corrective action in a timely manner for all cases of justified complaint, poor performance or failure reported by HUD.

3. When requested, provide the Office of Consumer and Regulatory Affairs, Manufactured Housing and Standards Division, HUD Headquarters, with a representative list of properties in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.

4. Inform HUD in advance of changes in production facilities, methods, design of the product, company name, ownership or mailing address.

EVALUATION:

This MR shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this MR shall apply for a renewal or revision 90 days prior to the review date printed on this MR. Submittals for renewal or revision shall be sent to HUD Headquarters. Appropriate User Fee shall be sent to:

U.S. Department of Housing and Urban Development
Technical Suitability of Products Fees
P.O. Box 954199
St. Louis, MO 63195-4199

The holder of this MR may apply for revision at any time prior to the review date. Minor revisions may be in the form of a supplement to the MR.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program", and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the MR. HUD will notify the manufacturer that the MR may be canceled when:

1) conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted materials, product, or system,

2) the manufacturer has changed its organizational form without notifying HUD, or

3) the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice, of the specific reasons for cancellation and the opportunity to present views on why the MR should not be canceled. No refund of fees will be made on a canceled document.

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This Materials Release is issued solely for the captioned firm and is not transferable to any person or successor entity.

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